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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,175	11/13/2003	Stanley W. Stephenson	84806THC	7884

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EXAMINER

FUREMAN, JARED

ART UNIT	PAPER NUMBER
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2876

DATE MAILED: 04/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/712,175

Applicant(s)

STEPHENSON ET AL.

Examiner

Jared J. Fureman

Art Unit

2876

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Receipt is acknowledged of the amendment, filed on 2/13/2006, which has been entered in the file. Claims 1-22 are pending.

#### ***Drawings***

1. The drawings were received on 2/13/2006. These drawings are acceptable to the examiner.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brick et al (US 6,269,342 B1) in view of Kobayashi (US 2002/0005827 A1).

Re claims 1-4, 7-13, 20, and 22: Brick et al teaches a display system (programmable shelf tag system 300, see figure 10), comprising: a) a writable display (display unit 340 of electronic shelf tag 330, see figure 10 and column 12, lines 34-37) associated with an identification code (a universal product code or tag ID or serial number on code display means 342, see figure 10 and column 12, lines 58-61) and arranged to receive data (through IR transceiver 338A) to form an image on the display, b) a display writer (portable programming device 350, see figure 10 and column 13,

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lines 1-4) for producing the data for writing the image on the display, c) a scanner (scanner 356, see figure 10 and column 13, line 2) connected to the display writer for sensing the identification code, d) a processor (processing unit 352, see figure 10 and column 13, line 2) linked to the scanner and the display writer and responsive to the identification code for programming the display writer to write an image associated with the identification code (also see column 14, lines 17-24); wherein the identification code is a UPC (Universal Product Code) (see column 12, lines 58-60); wherein the identification code is on a holder for the display (the code display means 342 is on a housing that holds the display 340, see figure 10); wherein the display is a shelf tag (display 340 is part of shelf tag 330, see figure 10 and column 12, lines 34-37); wherein the identification code is on a display (display means 342 may be LCD display, see column 12, lines 64-67); further comprising a central processor (host computer 312, see figure 10 and column 11, lines 16-29) containing display information (databases 314-318, see figure 10 and column 11, lines 16-29) associated with the identification code that is linked to the scanner and the display writer by a wireless communication link (the host computer 312 is linked to the portable programming device 350 through wireless access points 320A and 320B, see figure 8 and column 12, lines 9-12); a support including a printable surface (a housing of shelf tag 330, see column 12, lines 61-66); wherein the identification code is printed on the printable surface of the support (code display means 342 may be printed directly onto the housing of shelf tag 330, see column 12, lines 64-67); wherein the scanner is a bar code scanner (scanner 356 is a

bar code scanner, see column 14, lines 37-41); wherein the scanner and the writer are included in a hand held unit (portable programming device 350 is a hand held unit).

Brick et al fails to specifically teach the display being a light writable display arranged to receive an image wise pattern of light under a constant electric field to form an image on the display, the display writer producing the image wise pattern of light; wherein the light writable display includes: a pair of conductors, at least one conductor being transparent; a layer of cholesteric liquid crystal material disposed between the conductors, the cholesteric liquid crystal material having multiple stable optical states at zero electrical field; and a light absorber for forming an image wise thermal pattern in the cholesteric liquid crystal sufficient to change the optical state of the cholesteric liquid crystal in response to an image wise pattern of light; wherein the light writable display is attached to a support having contacts for making contact with the conductors on the light writable display and for providing external access to the conductors; wherein the display writer includes: a light source for producing a flash unit of light of sufficient intensity to generate sufficient heat in the light absorber to change the optical state of the cholesteric liquid crystal; an electronically programmable mask located between the light source and the display for defining the image wise pattern of light; a display drive connectable to the contacts for generating an electric field between the conductors for changing the optical state of the cholesteric liquid crystal; and a controller connected to the light source and the display drive for controlling the intensity of the electrical field and actuating the light source to create an image on the display.

Kobayashi teaches a display system, comprising: a) a light writable display (spatial light modulation element 20, see figure 8 and paragraph 193) arranged to receive an image wise pattern of light under a constant electric field (a constant electric field is provided by driving pulse generation unit 29, see figure 8 and paragraph 193) to form an image on the display; b) a display writer (light writing unit 12, see figure 8) for producing the image wise pattern of light for writing the image on the display; wherein the light writable display includes: a pair of conductors (transparent electrode layers 32 and 38, see figure 8 and paragraph 138), at least one conductor being transparent; a layer of cholesteric liquid crystal material (liquid crystal display element layer 36, see figures 4, 8 and paragraphs 138 and 141) disposed between the conductors, the cholesteric liquid crystal material having multiple stable optical states at zero electrical field; and a light absorber (photoconductive switching element layer 34, see figure 4 and paragraphs 142 and 193) for forming an image wise thermal pattern in the cholesteric liquid crystal sufficient to change the optical state of the cholesteric liquid crystal in response to an image wise pattern of light; wherein the light writable display is attached to a support (a housing or circuit board, for example, not shown but necessarily present) having contacts (contacts associated with connector 28, for example) for making contact with the conductors on the light writable display and for providing external access to the conductors; wherein the display writer includes: a light source (light source 26, see figure 8 and paragraph 193) for producing a flash unit of light of sufficient intensity to generate sufficient heat in the light absorber (layer 34) to change the optical state of the cholesteric liquid crystal; an electronically programmable mask

(TFT liquid crystal 24, see figure 8 and paragraph 193) located between the light source and the display for defining the image wise pattern of light; a display drive (driving pulse generation unit 29, see figure 8 and paragraph 193) connectable to the contacts for generating an electric field between the conductors for changing the optical state of the cholesteric liquid crystal; and a controller (controller 14, see figure 8) connected to the light source and the display drive for controlling the intensity of the electrical field and actuating the light source to create an image on the display (also see paragraphs 136-143, 154, 156-159 for a fuller description of the element 20 and light writing unit 12).

In view of Kobayashi's teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to include, with the system as taught by Brick et al, the display being a light writable display arranged to receive an image wise pattern of light under a constant electric field to form an image on the display, the display writer producing the image wise pattern of light; wherein the light writable display includes: a pair of conductors, at least one conductor being transparent; a layer of cholesteric liquid crystal material disposed between the conductors, the cholesteric liquid crystal material having multiple stable optical states at zero electrical field; and a light absorber for forming an image wise thermal pattern in the cholesteric liquid crystal sufficient to change the optical state of the cholesteric liquid crystal in response to an image wise pattern of light; wherein the light writable display is attached to a support having contacts for making contact with the conductors on the light writable display and for providing external access to the conductors; wherein the display writer includes: a light source for producing a flash unit of light of sufficient intensity to generate sufficient heat

in the light absorber to change the optical state of the cholesteric liquid crystal; an electronically programmable mask located between the light source and the display for defining the image wise pattern of light; a display drive connectable to the contacts for generating an electric field between the conductors for changing the optical state of the cholesteric liquid crystal; and a controller connected to the light source and the display drive for controlling the intensity of the electrical field and actuating the light source to create an image on the display; in order to provide a display that will maintain the image without electric power (see paragraph 7, of Kobayashi), thereby reducing energy consumption of the system.

Re claims 5, 6, 18 and 21: The teachings of Brick et al as modified by Kobayashi have been discussed above.

Brick et al as modified by Kobayashi fails to specifically teach wherein the light writable display is a product label; wherein the light writable display is a shelf talker; wherein the support has an adhesive backing; wherein the scanner is a radio frequency tag scanner.

However, the use of product labels and shelf talkers was old and well known to those of ordinary skill in the art at the time of the invention. Furthermore, the use of adhesive backings on product labels and the use of radio frequency tags was also well known to those of ordinary skill in the art at the time of the invention.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include, with the system as taught by Brick et al as modified by Kobayashi, wherein the light writable display is a product label; wherein the light



writable display is a shelf talker, in order to take advantage of the rewriting/updating abilities as taught by Brick et al and Kobayashi in the product label/shelf talker environment; wherein the support has an adhesive backing, in order to provide a simple means/method of attaching the display; wherein the scanner is a radio frequency tag scanner, since radio frequency tags and scanners are art recognized functional equivalents to bar codes and bar code scanners.

Re claims 14-17 and 19: The teachings of Brick et al as modified by Kobayashi have been discussed above.

Brick et al as modified by Kobayashi fails to specifically teach wherein the contacts are conductive ink; wherein the conductive ink is carbon in a polymer binder; wherein the display is attached to the support by the conductive ink; wherein the display is attached to the support by an anisotropic conductive adhesive providing electrical connection between the conductors of the display and the contacts on the support; wherein the polymer dispersed material is a dried emulsion of cholesteric liquid crystal in gelatin.

However, the use of conductive inks and polymer dispersed material of a dried emulsion of cholesteric liquid crystal in gelatin was well known to those of ordinary skill in the art at the time of the invention.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include, with the system as taught by Brick et al as modified by Kobayashi, wherein the contacts are conductive ink; wherein the conductive ink is carbon in a polymer binder; wherein the display is attached to the support by the

conductive ink; wherein the display is attached to the support by an anisotropic conductive adhesive providing electrical connection between the conductors of the display and the contacts on the support; wherein the polymer dispersed material is a dried emulsion of cholesteric liquid crystal in gelatin; in order to speed and/or simplify the manufacturing of the display by using conductive inks and conventional polymer dispersed material.

### ***Response to Arguments***

4. Applicant's arguments filed 2/13/2006 have been fully considered but they are not persuasive.

In response to applicant's argument that Kobayashi fails to disclose a light writable display that can receive an image wise pattern of light under a constant electric field to form an image (see page 8, last paragraph, of the amendment filed on 2/13/2006), the examiner respectfully disagrees. Kobayashi teaches a light writable display (spatial light modulation element 20, see figure 8 and paragraph 193) arranged to receive an image wise pattern of light (an image wise pattern of light is provided by light source 26 and TFT liquid crystal 24, see figure 8 and paragraph 193) under a constant electric field (a constant electric field is provided by driving pulse generation unit 29, see figure 8 and paragraph 193) to form an image on the display. Thus, Kobayashi clearly teaches a light writable display arranged to receive an image wise pattern of light under a constant electric field to form an image on the display, as is recited in applicant's claim 1.

In response to applicant's argument that Kobayashi does not teach a light source that forms an image, but rather that the image is formed by means of a thermal pulse (see page 9 of the amendment filed on 2/13/2006), Kobayashi utilizes light source 26, TFT liquid crystal 24 and a constant electric field supplied by driving pulse generation unit 29 to form an image in the spatial light modulating element (see figure 8 and paragraph 193). An image is formed in TFT liquid crystal 24 and is used to selectively block the light provided by light source 26, thereby creating an image wise pattern of light to form an image on spatial light modulating element 20.

Applicants argue that the present invention does not use a thermal pulse to form an image. Applicant's state that the present invention forms an image by use of light and an electric field in the absence of a thermal pulse, and point to page 6, lines 28-30 of the specification as originally filed (see page 9 of the amendment filed on 2/13/2006). However, as best understood by the examiner, applicant's figure 4 shows the response of the polymer dispersed cholesteric material when the material is subject to voltage and is either masked (masked material is represented by the line having filed boxes in figure 4) or unmasked (unmasked material is represented by the line having clear boxes in figure 4) and subject to the heat pulse from the flash unit. Thus, it appears as though applicants are using the applied voltage and the heat pulse (thermal pulse) provided by flash unit 82 to change the reflectance value of the material that is unmasked (see figure 4 and page 6, line 26 - page 7, line 4, of applicant's specification). Furthermore, applicant's claim 9 recites, "... a light absorber for forming an image wise **thermal pattern** in the cholesteric liquid crystal sufficient to change the optical state ..."

(emphasis added, see claim 9, lines 5-6) and applicant's claim 13 recites, "... a light source for producing a flash unit of light of sufficient intensity to generate sufficient heat in the light absorber ..." (emphasis added, see claim 13, lines 2-3). Thus, it appears as though applicants are using a thermal pulse to form an image.

Regarding the rejection of claims 5, 6, 14-19 and 21, it is noted that applicants have not properly traversed the well-known in the art statement, thus in accordance with MPEP 2144.03 paragraph C, the well-known in the art statement is taken to be admitted prior art. Applicant's traversal (see page 7 of the amendment filed on 2/13/2006) is inadequate because it does not specifically point out the supposed errors in the examiner's action, including stating why the noticed fact is not considered to be well-known in the art.

For these reasons it is believed that the combined teachings of Brick et al and Kobayashi meet the claimed limitations.

### ***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jared J. Fureman whose telephone number is (571) 272-2391. The examiner can normally be reached on 7:00 am - 4:30 PM M-T, and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on (571) 272-2398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Jared J. Fureman  
Primary Examiner  
Art Unit 2876

April 19, 2006